

REMARKS

Claims 1-15 are pending and rejected in the present application. Claim 14 is amended, and claim 16 is added, hereby.

Responsive to the objection to the drawings, Applicant has submitted a replacement drawing sheet as is more particularly described in the Drawings section hereinabove. Applicant submits that the drawings are now in allowable form, and respectfully requests withdrawal of the objection.

Claim 14 is amended hereby to correct an informality therein. Applicant submits that claim 14 is now in allowable form.

Responsive to the rejection to claims 1-4, 6-7 and 9-14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,556,260 (Itou, et al.) in view of U.S. Patent No. 6,036,568 (Murouchi, et al.) in further view of U.S. Patent No. 4,422,732 (Ditzik), Applicant respectfully traverses.

A *prima facie* case of obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992) (Emphasis Added). Further, the prior art references must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Applicant submits that the composite device resulting from the proposed combination of the cited references does not produce the claimed invention, that the cited references fail to teach all the limitations of the claims, and that therefore a *prima facie* case of obviousness has not been established in regard
5 to claim 1.

Itou, et al., discloses a liquid crystal display apparatus that has two rigid substrates made of borosilicate glass 0.7mm thick. (*column 9, lines 45-52*). Ditzik discloses a liquid crystal display panel 50 (Fig. 5) having substrates 54A and 54B of fused silica or quartz glass. (*column 6, lines 51-60*). Ditzik uses a
10 flexible membrane 58A for the purpose of following irregularities in the rear substrate surface 54A (see Fig. 6), thereby enabling the production of liquid crystal panels that are many times larger than previously realized. Ditzik bonds with epoxy a second membrane 58B to first membrane 58A to increase rigidity of the assembly. (*column 7, lines 56-68*). Murouchi, et al., discloses a process that
15 uses a fixing resin 3 (Fig. 1) and a sealing resin 4 to temporarily fix and seal a counter substrate 2 to an array substrate 1. (*column 4, lines 33-37*).

The Examiner asserts that it would have been obvious for one of ordinary skill in the art to have added the flexible membranes of Ditzik to the liquid crystal display of Itou, et al., and to manufacture the display utilizing the method of
20 Murouchi, et al. As best understood by Applicant, the proposed combination results in a composite liquid crystal display device that has rigid substrates with a

flexible membrane placed in close association with at least one of those rigid substrates. A second flexible membrane is later attached by epoxy to the first membrane to increase the rigidity of the assembly. The composite device would be manufactured according to the method of Murouchi, et al., i.e., one substrate
5 is temporarily affixed to another with sealing epoxy that is cured.

The composite device that results from the proposed combination does not result in a flexible, electrically addressable liquid crystal display. Further, the proposed combination does not yield a liquid crystal display device having a protective sheet disposed over at least one surface of the display. The
10 composite device would be manufactured according to the method of Murouchi, et al., which provides for scratch-free alignment of one substrate relative to another. However, the composite device is not manufactured according to the method of the present invention, i.e., subjecting a protective sheet overlying a surface of the display to conditions of temperature and pressure to thereby cause
15 the sheet to adhere to that surface of the display.

Since the composite device that results from the proposed combination of the cited references does not produce the claimed invention, a *prima facie* case of obviousness has not been established.

Applicant further submits that the cited references fail to disclose or
20 suggest all the limitations of the claims.

Claim 1 recites in part "placing a protective sheet over at least one of said first and second surfaces" of a flexible liquid crystal display. Applicant submits that such a structure is not disclosed or suggested by the cited references, alone or in combination, and includes distinct advantages thereover.

5 The liquid crystal display of Itou, et al., has rigid glass substrates disposed on opposite sides of a liquid crystal layer. Thus, the rigid glass substrates are part of the liquid crystal display. The Examiner, however, equates the rigid glass substrates of Itou, et al., with the protective sheets of the present invention. (see page 2, paragraph 3 of the present Official Action). The rigid glass substrates of
10 Itou, et al., are not protective sheets. Nor are the rigid glass substrates of Itou, et al., subjected to conditions of temperature and pressure to thereby form a laminate including the liquid crystal display. Thus, Itou, et al., fails to disclose or suggest protective sheets placed over a surface of a flexible liquid crystal display, as recited in part by claim 1.

15 The present invention includes distinct advantages over the cited references. The protective sheets of the present invention are not part of the liquid crystal display, per se, but rather are laminated onto a display having a flexible substrate to thereby enable the display device of the present invention to withstand abrasion, impact and various environmental factors. (see page 2, lines
20 23-27 of the present specification).

In addition to the foregoing reasons, Applicant submits that there is no suggestion or motivation to combine the cited references to produce the claimed invention, and that therefore a *prima facie* case of obviousness has not been established.

5 A prior art reference that teaches away from the claimed invention is a significant factor to be considered in determining obviousness. *In re Gurley*, 27 F.3d 551, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 218 USPQ 769, 779 (Fed. Cir. 1983). Thus, where a
10 prior art reference teaches away from the present invention and/or it is improper to combine the prior art references, a *prima facie* case of obviousness has not been established.

As discussed above, Ditzik uses a flexible membrane for the purpose of following irregularities in the rear substrate surface 54A (see Fig. 6), thereby
15 enabling the production of liquid crystal panels that are many times larger than previously realized. The structure of Ditzik is intended for producing displays of relatively large size, whereas the present invention is intended to produce relatively small display panels for use in small products, such as, for example, credit cards, signs, clocks, and the like. (*page 2, lines 23-27 of the present*
20 *specification*). Ditzik emphasizes in several places that rigidity is important. A second membrane is bonded to the first flexible membrane by epoxy. After the

epoxy hardens the two membranes become rigid. (*column 7, lines 63-68 and column 11, lines 8-10*).

In short, Ditzik generally teaches that large-sized liquid crystal display panels are made possible by using two flexible membranes that are bonded
5 together in order to be made rigid, and thereby teaches away from the process for laminating a relatively small-sized flexible liquid crystal display of the present invention. Since Ditzik teaches away from the present invention, Applicants submit that a *prima facie* case of obviousness has not been established.

For all the foregoing reasons, Applicant submits that a *prima facie* case of
10 obviousness has not been established in regard to claim 1. Accordingly, Applicant respectfully requests withdrawal of the rejection. Further, Applicant respectfully submits that claim 1 and claims 2-13 depending therefrom are in condition for allowance in their present form, which is hereby respectfully requested.

15 Claim 3 was also rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,556,260 (Itou, et al.) in view of U.S. Patent No. 6,036,568 (Murouchi, et al.) in further view of U.S. Patent No. 4,422,732 (Ditzik). Claim 3 recites in part "a flexible substrate". As discussed above, Ditzik fails to disclose or suggest a flexible substrate, and in fact teaches a process that increases
20 rigidity. Ditzik thereby teaches away from the flexible substrate of the present invention. Thus, Applicant submits that a *prima facie* case of obviousness has

not been established in regard to claim 3. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claim 3.

Claim 14 was also rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,556,260 (Itou, et al.) in view of U.S. Patent No. 6,036,568 (Murouchi, et al.) in further view of U.S. Patent No. 4,422,732 (Ditzik). Claim 14 recites in part “providing a flexible, electrically addressable liquid crystal display having first and second surfaces . . . placing a protective sheet over each of said first and second surfaces” and “subjecting said protective sheets to conditions of temperature and pressure effective to cause said protective sheets to adhere to said first and second surfaces, thereby forming a laminate comprising said electrically addressable liquid crystal display.”

Thus, claim 14 recites subject matter that is similar to the subject matter recited in claim 1. For the same reasons given above in regard to claim 1 (i.e., the composite device resulting from the proposed combination of the cited references does not produce the claimed invention, the cited references fail to disclose or suggest all the limitations of the claim, and the cited references teach away from the present invention), Applicant submits that a *prima facie* case of obviousness has not been established in regard to claim 14. Accordingly, Applicant respectfully requests withdrawal of the rejection and allowance of claim 14 and claim 15 depending therefrom.

Claims 5 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,556,260 (Itou, et al.) in view of U.S. Patent No. 6,036,568 (Murouchi, et al.) in further view of U.S. Patent No. 4,422,732 (Ditzik) and still further in view of U.S. Patent No. 3,816,786 (Churchill).

5 Applicant respectfully points out, however, that claim 5 depends from claim 1 which is in condition for allowance for the reasons given hereinabove.

Accordingly, claim 5 is also in condition for allowance which is hereby respectfully requested. Similarly, claim 15 depends from claim 14 which is in condition for the reasons given hereinabove. Accordingly, claim 15 is also in

10 condition for allowance which is hereby respectfully requested.

Responsive to the rejection of claim 8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,556,260 (Itou, et al.) in view of U.S. Patent No. 6,036,568 (Murouchi, et al.) in further view of U.S. Patent No. 4,422,732 (Ditzik) and still further in view of U.S. Patent No. 6,091,196 (Codama), Applicant

15 respectfully points out that claim 8 depends from claim 1, which is in condition for allowance for the reasons given hereinabove. Accordingly, Applicant submits that claim 8 is also in condition for allowance and respectfully requests same.

Claim 16 has been added hereby to further protect the patentable subject matter of the present invention. Claim 16 recites in part

20 "providing a flexible, electrically addressable liquid crystal display having first and second outer surfaces, said first outer surface comprising a flexible substrate of the display, said second outer surface comprising an electrically conductive layer overlying a

5 dielectric layer, placing a protective sheet over at least one of said first and second surfaces, and subjecting said protective sheet to conditions of temperature and pressure effective to cause said protective sheet to adhere to said surface, thereby forming a laminate comprising said electrically addressable liquid crystal display

(*Emphasis Added*). Thus, claim 16 recites subject matter that is generally similar to the subject matter recited by claims 1 and 3. As discussed above in regard to those claims, a *prima facie* case of obviousness is not established by the cited
10 references. For the same reasons given above in regard to claims 1 and 3, Applicant submits that claim 16 is also in condition for allowance and respectfully requests same.

For all the foregoing reasons, Applicants submit that a *prima facie* case of
15 obviousness has not been established in regard to the pending claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

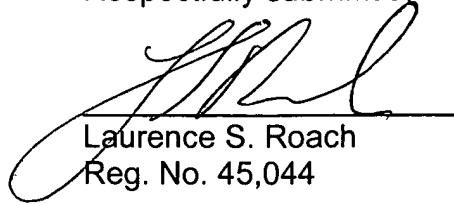
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The Examiner is invited to telephone the undersigned in regard to this
Amendment and the above identified application.

Respectfully submitted,

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Date


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